GERAGHTY & MILLER, INC.
Ground-Water Consultants

July 18, 1988

Mr. Warren Smull
Monsanto Company
800 N. Lindbergh Blvd.
Mail Code G4WM
St. Louis, Missouri 63167

Dear Warren:

Enclosed are our preliminary comments on E&E's site information. I am still waiting for some calculations from our modeling group which are due here later this week. We will incorporate those comments in the second draft after you have had a chance to review the first one.

Please call if you have any questions.

Sincerely,

GERAGHTY & MILLER, INC.

Nicholas Valkenburg
Senior Associate

NV:dv
Enc.

CER 097922

125 East Bethpage Road • Plainview, New York 11803 • (516) 249-7600
Cable: WATER • Telecopy: (516) 249-7610

DRAFT

July 18, 1988

Mr. Warren Smull
Monsanto Company
800 N. Lindbergh Blvd.
Mail Code G4WM
St. Louis, MO 63167

Dear Mr. Smull:

In accordance with your request we have reviewed the report entitled, "Expanded Site Investigation, Dead Creek Project Sites at Cahokia/Sauget, Illinois" by Ecology and Environment, Inc. (E&E) which is under contract to the Illinois Environmental Protection Agency (IEPA). Overall, the report is somewhat disjointed because the data and conclusions are presented in sections dealing with each type of investigation (soil gas, ground water, etc.) rather than on a site by site basis (Site G, etc.). For instance, section 4.2.5 presents the results of ground-water sampling for all of the sites. The report would have been much more readable and coherent if each site had been discussed in its own section. As it is currently organized, the reader must page from section to section to determine what the total impact a particular site may have on the environment.

The report has fulfilled some of the objectives on page 1-2, but not all. In general, the study has located and defined to a greater or lesser extent (depending on the site) the types and approximate quantities of waste materials present but it has not provided "a comprehensive catalog of waste present at the various project sites" because of cursory studies at some sites. It has demonstrated that releases occur to the environment in certain locations, such as the ground-water discharge to the Mississippi River from Site R (Krummrich Landfill) and a possible dust problem at Site G. Because of a lack of sufficient data, however, the report has not adequately assessed the pathways by which contaminants could be released into the environment from most sites and has not adequately assessed the expected movements of contaminants in the various media (air, ground water, etc.) at all sites.

As a basis for HRS scoring, the study is inadequate because there some critical data insufficiencies and technical flaws. In the following sections we have expanded on the general comments made above and have provided illustrative examples of problems and inadequacies in the report. For convenience, we have organized our comments according to chapter beginning with Chapter 7 which presents the conclusions of the report.

CHAPTER 7 CONCLUSIONS AND FINDINGS

1. On page 7-2, the first conclusion implies that Monsanto is responsible for much of the waste in several sites because many compounds specific to Monsanto's processes found in Site R (for which Monsanto was primarily responsible) were also found in the other sites. While there are compounds in common (benzene, chlorobenzene, and phenols, for example) the route by which these compounds came to be in some locations is unknown and will probably never be known. In addition, several other compounds are also present which implicates other sources. For instance, toluene, ethylbenzene, xylene and chlorinated volatile organic compounds (VOC) were found in subsurface soils at Site G and polyaromatic hydrocarbons (PAH) were found at Site O. The presence of benzene, toluene, ethylbenzene and xylene (BTEX) could be the result of fuel (gasoline) contamination and the PAH are likely associated with a former ~~coal-tar~~ operation~~s~~ ~~in the area~~. It should also be noted that virtually every industry in the Sauget area contributed to contamination at Site O where the sludge from the ~~regional~~ Sauget POTW was deposited.

2. The report states on page 7-4 that waste from the Sauget POTW and flow of contaminated leachate to the Mississippi River has lead to "a general degradation of

water quality in the river and has contaminated fish in the river." As support for this conclusion, the report cites a U.S. Food and Drug Administration (USFDA) study indicating the presence of contaminants from the DCP (Dead Creek Project) area in fish collected 100 miles downstream. The IEPA's site investigation did not study the Sauget POTW or the river and, therefore, can neither assess the impact of POTW discharges on the river nor differentiate the impact of the POTW discharges from the DCP area's impact from ground-water discharge or surface runoff. The fish study conducted by the FDA is not conclusive evidence that materials from the DCP area have affected the river because of the great distance and the fact that other sources may have had impacts on the river. Monsanto is in the process of conducting a risk assessment to determine what impact Site R is having on the Mississippi River and IEPA should use this information in the HRS scoring process rather than the FDA study which is not applicable.

3. In making reference to Site K on page 7-5, the report implies that the presence of a dark liquid or dark staining (as in interpretated from a photograph) is indicative of contamination. Unless the IEPA has analytical results or other scientific evidence to indicate that this material is waste or hazardous, this

conclusion should be deleted from the report because it is speculative and unjustified.

4. On page 7-7 the report provides several conclusions regarding drinking water supplies. These conclusions are critical to HRS scoring because contaminated drinking water supplies weigh heavily in the score. There is no evidence in the report that indicates that drinking water supplies in the DCP area are contaminated. Virtually all of the drinking water provided originates from a surface water intake in the Mississippi River about 3 miles upstream from the DCP area. Because this intake is upstream there is no possibility that contaminants from the site could enter this system.

Of the 50 wells mentioned on page 7-7 of the report, none appear to be downgradient from DCP areas where contaminants were found. The closest wells are along Judith Lane and are listed as GW-52 through GW-55 on Figure 3-15. All of the low level volatile organics found in these wells were either in the blanks or were below method detection limits. None of these wells can be regarded as being contaminated. If, however, the IEPA is concerned about the use of these wells for potable supplies, it would be prudent to prohibit the homeowners from using these wells for potable ~~or irrigation~~ purposes.

Besides the four wells on Judith Lane, none of the other wells shown on Figure 2-19 appear to be at risk from contaminants from the DCP area. Some of these wells are downgradient of sections D and E of Dead Creek but virtually no contamination was found in these sections. The remaining wells are either upgradient of DCP area or are too far away from the area to be at risk.

The nearest downstream potable public supply is located approximately 28 miles south of the DCP area at the Village of Crystal City, Missouri. Crystal City apparently relies on a Ranney Collector adjacent the river as a source of potable water. A Ranney collector is not technically a surface water intake because it pumps ground water, although it does rely in induced infiltration from the river. The well is more than three miles (the zone considered for HRS scoring) from the DCP area and any contaminants entering the river from the DCP sites will probably be diluted to concentrations below detectable levels before reaching this point in the river. The quality of water in the Ranney Collector is the sum of all upstream sources, not just the DCP site's contribution, and without being able to differentiate the DCP area contribution from other sources, the IEPA cannot estimate the impact of the DCP

area on the Ranney Collector. For all these reasons, the IEPA cannot factor the existence of this well into the HRS scoring program. Here again, if the IEPA is concerned about contaminated drinking water being consumed at Crystal City, the Ranney Collector should be monitored.

The nearest downstream surface water intake is at river mile 110, a remote 65 miles south of the DCP area. Like the Crystal City well, this supply is also more than three miles from the DCP area and contaminants which originate from the DCP area would likely be diluted to levels below detection at this distance. The IEPA should not consider the Chester water intake in the HRS scoring for reasons identical to those that should keep Crystal City Ranney Collector from being considered (see Number 4 above).

5. Page 7-37 of the report again refers to private wells and indicates that concentrations of toluene, ethylbenzene, carbon disulfide, and styrene were found in private wells. The table in Appendix D, however, shows that these compounds were found below method detection limits which indicates that concentrations are so low they cannot be quantified. In addition, only one sample from each well was collected and the analytical results have not been confirmed. Without confirmation of

higher, detectable levels, the IEPA cannot conclude that the private wells are contaminated. Any perceived risk on the IEPA's part could be eliminated by prohibiting the use of these wells.

6. The analysis of air samples at Sites Q and R are discussed on page 7-38. The report indicates that PCBs were found in three samples from locations DC-19, DC-20, and DC-26; however, the levels that were found are extremely low and the report does not make clear whether or not these results are for filtered air samples or whether they were as a result of analyses of particulate matter. The values that are given are in the parts per trillion range and the report does not indicate the confidence level of the data. In order to determine how accurate and precise these values are, the IEPA should provide values of accuracy and precision to determine how much confidence can be attributed to these results.

In addition to the potential problems regarding accuracy and precision, it is not clear what these analytical results mean because the sampling technique appears to be flawed. The report does not specify, for example, which stations are upwind and which stations are downwind of Sites Q and R. For example, Figure 4-53 indicates that the wind was predominately from the

southeast during sampling on July 22. The nearest potential upwind stations are in the vicinity of Site G where PCBs were identified at several stations. If PCBs were found upwind at Site G, the PCBs at stations DC-19, DC-20, and DC-26 cannot be attributed to Site Q (see page 4-173).

Also on page 4-173 the report concludes that Site R could potentially be a supplemental contributor of PCBs and phenols. It should be noted that Site R is capped with a low permeability material (permeability 5 x 10^{-7} cm/sec) which ranges in thickness from 2 to 10 feet. It is virtually impossible for PCBs and phenols to leave Site R because the most likely mode of transport is via the mobilization of particulate matter which is prevented by the cap.

Overall, the IEPA's air sampling program is not comprehensive and inadequate for determining whether releases to the environment have occurred. The IEPA has ignored the fact that the Sauget area is a highly industrialized community with numerous potential sources of contaminants to the air. Attempts to attribute a particular source require a very comprehensive and sophisticated sampling approach over a long period of time. This has not been done.

7. Estimated loading of organics to the Mississippi River from Areas 1 and 2 is discussed on page 7-39. We cannot comment on the 130 pound per day figure because the IEPA does not make it clear how that number was derived. The agency appears to have factored out deep zone contributions from Geraghty & Miller's 1986 estimates; however, the actual process which this was accomplished has not been set out.

One assumption which IEPA makes with regard to contaminant loading to the river appears not to be technically correct. The agency has estimated that about 20 percent of the loading at Site R is due to contribution from Site O. However, Geraghty & Miller's study for the SSDRA (Sauget Sanitary Development and Research Association) indicates that contaminants from Site O have not reached Site R. Geraghty & Miller is in the process of further defining the area of groundwater contamination downgradient from Site O and this data will be provided to the IEPA after it is available. In any HRS scoring, the IEPA should take this new information into consideration.

8. Contaminant migration and fate is discussed on page 7-39. The analysis of contaminant fate is oversimplified and technically incorrect because of basic flaws in the modeling approach that was taken.

The main problem with the flow model is that the shallow and intermediate zones were modeled separately. The report indicates that two separate models were constructed but that by assuming a "uniform vertical gradient" the model is essentially three-dimensional. A uniform vertical gradient implies an effect equivalent to a recharge rate. That is, the inter-layer flux would be calculated by multiplying the vertical permeability by the "uniform gradient". If this was done, the report should specify what value was used for the "uniform gradient". It appears, however, that the two models are totally separate and no flow was calculated between layers. This is unrealistic given the hydrogeologic conditions at the site.

The deep zone of the aquifer system in the Sauget area is the dominant flow zone due to its high permeability. This was totally neglected in the model probably because no deep wells were installed in most of the area.

Recharge was neglected by stating that it was negligible. The report should provide a sensitivity analysis or a mass balance analysis to support this assumption. Assuming a gradient of 0.0011 ft/ft, K=6.5 ft/d (48.7 gpd/ft^2), saturated thickness of 30 feet,

and the length of the eastern boundary (8500 ft), the total influx through the eastern boundary in the shallow zone of the E&E model is (Q=KAI), about 1800 ft^3/d. A recharge rate of 6 inches per year applied to the aquifer surface equals 116,400 ft^3/d. This is 65 times greater than the influx through the eastern boundary. In fact, it would only require about 0.008 ft/yr of recharge to balance the eastern flux. From this simple mass balance calculation, we conclude that recharge cannot be neglected. Ritchey et al. (1984) also concludes that recharge cannot be neglected.

The report does not show or cite the regional water-level map used to estimate the eastern boundary condition. No cross-sections are provided to justify the layer bottom elevations.

The model assumes that vertical permeability equals horizontal permeability when calculating the flux of contaminants from the shallow zone to the intermediate zone. This is seldom justifiable for glacio-fluvial aquifer systems such as that of the Sauget area. Typically, the ratio of horizontal to vertical permeability is 10 to 1 or 100 to 1. Thus, the mass of contaminants moving into the intermediate zone was greatly exaggerated.

Details of loading calculations were not given, however, they appear to be based on steady-state or average flow conditions (page 5-22). If this approach was used, then a transport model is unnecessary.

The modeling concept is also flawed because the finite difference mesh contains far too few nodes (462) for this type of analysis. At least three times this number should have been used. More detailed analysis of residual statistics should be given to justify the flow model calibration results. This would include calculation of the residual mean, residual standard deviation, and the standard errors associated with the transmissivity and storage estimates.

9. On page 7-43 the IEPA indicates that the average total organic contaminant concentration at Site G is 4,406 mg/kg (milligrams per kilogram) which is calculated from three subsurface samples (G5-37, G7-69, and G8-70). This estimate is likely to be biased because three samples are not representative of the contamination in Site G. An average concentration requires data from a representative number of grid points.

10. On page 7-45 the report concludes (presumably based on modeling results) that contaminants are migrating vertically at Sites G, H, and I. This conclusion is

unwarranted because no wells were installed in the intermediate zone and the vertical hydraulic gradient was not measured. Modeling results without field evidence of a driving force to transport contaminants from the shallow zone to the intermediate zone are not sufficient. In fact, Geraghty & Miller has already demonstrated that the vertical gradient of Site O and at the Route 3 Drum Site is slight or nonexistent and we expect similar vertical gradients at Sites G, H, and I.

11. The report concludes on page 7-46 that the present distribution of contamination in Area 1 wells indicates that historical pumpage has influenced the distribution of contaminants. This conclusion is unsupported by the evidence which is from a very few wells, all of which are drilled in the shallow zone. In order to determine whether or not historical pumpage has had an impact on the distribution of contaminants, the IEPA and E&E would have had to drill a much larger number of wells in the shallow zone as well as in the intermediate and deep zones.

While there was a general pumping center identified in the Sauget area (formally called Monsanto, Illinois), individual wells generate individual areas of influence and without being able to reconstruct these zones of influence, the report cannot attribute

the occurrence of contaminants to pumpage patterns. The level of detail obtained by IEPA in this study is not adequate to draw the conclusion that pumpage is responsible for contaminant distributions.

12. On page 7-47, the IEPA indicates that contaminants originating from Area 1 sites would be preferentially transported to the intermediate zone and would reach the Mississippi River in approximately 20 years. This conclusion is unwarranted based on the modeling exercises that were undertaken (see number 8 above). As we have indicated the modeling studies were over simplified, technically incorrect and the models were not calibrated.

13. In discussing Area 2, the report (page 7-48) indicates that there is a common generator for the various wastes in the DCP area. As we have already indicated, this conclusion is incorrect. The presence of PAHs, and metals indicates more than one generator. Monsanto is not totally responsible for all of the contamination in Area 1.

14. Also on page 7-48 the report concludes that the likelihood of a common generator and the presence of common pathways supports aggregating Sites O, Q, and R for HRS scoring purposes. In fact, there are many reasons why

the sites should not be aggregated. The current condition, history of waste deposition, relationship of wastes to the water table and the fact that there is more than one generator of the wastes indicate that each site should be considered separately.

Both Sites O and R are already capped and therefore do not represent sources of contamination to the air because particulate matter and volatile organic compounds cannot escape. This is not true of Site Q which has only been partially or inadequately covered. By aggregating sites, the HRS score would be biased by assuming that Sites O and R are sources of contaminants in the air which is clearly not correct.

The Geraghty & Miller report indicates that wastes at Site R are below the water table whereas the waste in Site O is above the water table. Because of the different relationship of the waste to the water table at each site, the impact of Site O on the ground water system is different than that of Site R. There is evidence that contaminants have not migrated away from Site O in any great concentrations whereas there is evidence of ground-water contamination at Site R. The vertical gradients at clusters in the vicinity of Site O indicate that vertical migration is not occurring and

contaminants will remain confined to the shallow zone where contaminant transport is very slow.

The ground-water studies in Site Q cannot be regarded as representative of ground-water conditions at that site. The site is 90 acres in area and only six wells were installed. Without additional wells, the ground-water quality data base that has been generated for this site cannot be regarded as adequate for HRS scoring. The wells that were installed may simply have intersected areas where concentrations of contaminants similar to those in Site R were found. Given the history of the site, which indicates haphazard disposal, additional wells might yield data which lead to a different conclusion regarding the origin of contaminants. In addition, discharges to the river, if any, cannot be evaluated.

The boring program conducted by the IEPA in the part of Site Q east of Site R is also not representative of the whole site. Along with the other reasons given above, Site Q should not be combined with Sites O and R because it is not well understood.

CHAPTER 2

15. On page 2-38 the report discusses the locations of privates wells and indicates that at least 50 area residents have wells which are used for drinking water or irrigation. The reason given in the report for extending the assessment beyond the three mile radius required for HRS scoring is not legitimate. Unless there is a substantial risk that contaminants will extend beyond the three mile radius there would be no reason to expand the study area. It would have been helpful for IEPA to provide a map showing the three mile radius around the site in order to determine which private wells are in fact included in the area.

The reason given for expanding the assessment beyond the three mile radius is also not technically based and appears to support our previous contention that it is IEPA's purpose to obtain enough information to place the sites on the NPL rather than to evaluate in environmental impact of the DCP sites. The IEPA's intended purpose of placing these sites on the NPL is again demonstrated on page 3-46 where the report says that air sampling was conducted "in order to increase the possibility of qualifying sites for inclusion on the USEPA NPL." Here again, the IEPA has given a nontechnical reason for conducting air sampling. What

the report should have said that was the NCP requires an evaluation of all possible routes by which contaminants could enter the environment.

16. The IEPA gives the degradation in ground-water quality in the area as one likely reason for the cessation of ground water pumping. This is not accurate. The reason why ground-water pumping declined was because "once through" process systems became uneconomical as a result of the Clean Water Act discharge requirements. As industry switched to recycling water, the demand decreased dramatically.

CHAPTER 3

17. The well construction techniques are described on page 3-35. The paragraph at the top of the page indicates that the annulus was filled with a grout after the bentonite seal had been placed around the well casing. This statement is not entirely accurate. In at least one case, an observer from Geraghty & Miller saw drilling cuttings (possibly contaminated) being kicked back into the annulus of well at the same time the grout was being added. For more detail, please refer to the our letter of _____ in which the field protocols used by the IEPA were critiqued.

CHAPTER 5

18. Figure 5-4 and this section of the report appears to indicate that the general ground-water flow towards the river is reversed during the months of March, April, May, and November. This is not correct. River stage is related more to rainfall in the upper reaches of the Mississippi River basin rather than events in the vicinity of Sauget which means that flow reversals can occur any time. Flow reversals must be analyzed on a probability basis in a fashion similar to estimating frequency of occurrence of various river stages.

Geraghty & Miller's report has indicated that the flow is reversed approximately 12 percent of the time which is based on a examination of hydrographs from Monsanto's monitoring wells and the entire historical record kept by the Corps of Engineers for river stages in the Mississippi River. A major reason why we have very little confidence in report's estimates of contaminant loading to the Mississippi River is because they are based on computer generated discharges calculated by the model which, in turn, are based on Figure 5-4.

19. On page 5-26 of the report, an incorrect method has been used for calculating loading to the river from Area 1 sites. The equation $m = Q \times C_{average}$ is used,

where m is the mass, Q is flow and $C_{average}$ is the average concentration at the site. It appears that the report is attempting to apply the conservation of mass principle; that is the mass leaving the site will eventually discharge to the river. In this case, the principle has been incorrectly applied because it does not take into consideration processes such as adsorption, biodegradation, and hydrodynamic dispersion, which attenuate concentrations. These calculations, along with the flawed flow estimates, have resulted in an overestimate of contaminants discharging to the river.

CHAPTER 6

20. Table 16-16 (on page 6-43) is a summary of the contaminant transport pathway and exposure route assessment. Site R should be eliminated from the first column under "runoff." Even though contaminated runoff may have been a problem in the past, it is no longer a problem because the site is capped. In addition Site O should be eliminated from the "dust/volatilize emission category" under "potential routes" because the site has been covered and there is virtually no possibility that dust or volatile organic compounds are escaping.

We have already discussed the problems associated with the modeling which has led to incorrect estimates

of loading to the Mississippi River. Many sites such as G, H, and I, which are remote from the site are probably not contributing to contamination in the Mississippi River and should be shifted to the column representing potential pathways.

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21. Tables 1A through 3C compare analytical results of split samples collected by Geraghty & Miller during E&E sampling. In general, the laboratory results agree well, except for some samples which contain high levels of contaminants which may be out the calibration range of the analytical instruments.

22. Page R-25 in the Appendices states that the Geraghty & Miller, Inc. data for Site R has not been made available. The statement on page R-25 indicates that much of this section is outdated and is in need of review because the IEPA has been in the possession the Geraghty & Miller data for almost two years.

- END -

Table 1A Summary of Volatile Organic Compounds in Ground Water at Site O, SSDRA, Sauget, Illinois.

Well Designation:	EE-21		EE-22		EE-23		EE-24		EE-25	
Date:	7/14/76		7/14/76		7/14/76		7/14/76		7/14/76	
USEPA Priority Pollutant Volatile Organic Compounds Concentrations are in ug/L	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
acrolein	<100	NA	<50,000	NA	<100	NA	<100	NA	<100	NA
acrylonitrile	<100	NA	<50,000	NA	<100	NA	<100	NA	<100	NA
benzene	<4.4	ND	219,000	150,000	<4.4	ND	8.0	20	<4.4	ND
bis(chloromethyl) ether	<10	NA	<5,000	NA	<10	NA	<10	NA	<10	NA
bromoform	<4.7	ND	<2,400	ND	<4.7	ND	<4.7	ND	<4.7	ND
carbon tetrachloride	<2.8	ND	<1,400	ND	<2.8	ND	<2.8	ND	<2.8	ND
chlorobenzene	<6.0	ND	151,000	180,000 E	<6.0	ND	<6.0	8	<6.0	ND
chlorodibromomethane	<3.1	ND	<1,600	ND	<3.1	ND	<3.1	ND	<3.1	ND
chloroethane	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
2-chloroethylvinyl ether	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
chloroform	<1.6	ND	2,530	1,800	<1.6	ND	<1.6	ND	<1.6	ND
dichlorobromomethane	<2.2	ND	<1,100	ND	<2.2	ND	<2.2	ND	<2.2	ND
dichlorodifluoromethane	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
1,1-dichloroethane	<4.7	ND	<2,400	1,700	<4.7	ND	<4.7	ND	<4.7	ND
1,2-dichloroethane	<2.8	ND	<1,400	2,600	<2.8	ND	<2.8	ND	<2.8	ND
1,1-dichloroethylene	<2.8	ND	<1,400	ND	<2.8	ND	<2.8	ND	<2.8	ND
1,2-dichloropropane	<6.0	ND	<3,000	ND	<6.0	ND	<6.0	ND	<6.0	ND
cis-1,3-dichloropropylene	<5.0	ND	<2,500	ND	<5.0	ND	<5.0	ND	<5.0	ND
trans-1,3-dichloropropylene	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
ethylbenzene	<7.2	ND	<3,600	860	<7.2	ND	<7.2	ND	<7.2	ND
methyl bromide	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
methyl chloride	<10	NA	<5,000	NA	<10	NA	<10	NA	<10	NA
methylene chloride	12.6	ND	49,500	31,000	12.0	ND	9.2	ND	12.1	ND
1,1,2,2-tetrachloroethane	<6.9	ND	16,200	12,000	<6.9	ND	<6.9	ND	<6.9	ND
tetrachloroethylene	<4.1	ND	<2,100	ND	<4.1	ND	<4.1	ND	<4.1	ND
toluene	<6.0	ND	11,800	1,300	<6.0	17	<6.0	ND	<6.0	ND
trans-1,2-dichloroethylene	<1.6	ND	27,900	14,000	<1.6	ND	<1.6	ND	<1.6	ND
1,1,1-trichloroethane	<3.8	ND	7,830	5,000	<3.8	ND	<3.8	ND	<3.8	ND
1,1,2-trichloroethane	<5.0	ND	<2,500	ND	<5.0	ND	<5.0	ND	<5.0	ND
trichloroethylene	<1.9	ND	55,300	64,000	<1.9	ND	<1.9	ND	<1.9	ND
trichlorofluoromethane	<10	NA	<5,000	NA	19.0	NA	<10	NA	<10	NA
vinyl chloride	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
Sub Total 1	12.6	0	541,060	464,260	31	17	17.2	28	12.1	0

NA Not analyzed.
ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 1A Summary of Volatile Organic Compounds in Ground Water at Site O, SSDRA, Sauget, Illinois.

Well Designation:	EE-21		EE-22		EE-23		EE-24		EE-25	
Date:	7/14/76		7/14/76		7/14/76		7/14/76		7/14/76	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
Non-Priority Pollutant Volatile Organic Compounds										
acetone	<10	ND	67,700	34,000	17.4	ND	<10	ND	15.8	ND
methyl ethyl ketone	<10	13 B	92,100	54,000 E	<10	11 B	<10	ND	<10	5 BJ
carbon disulfide	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
vinyl acetate	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
2-hexanone	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
methyl-iso-butyl ketone	<10	ND	25,200	ND	<10	ND	<10	ND	<10	ND
styrene	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
m-xylene	<10	ND	<5,000	2,600	<10	ND	<10	ND	<10	ND
o- and p-xylenes	<10	ND	<5,000	ND	<10	ND	<10	ND	<10	ND
Sub Total 2	0	13	185,000	90,600	17.4	11	0	0	15.8	5
Total VOCs Analyzed	12.6	13	726,060	554,860	48.4	28	17.2	28	27.9	5

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 2A Summary of Acid Extractable Compounds in Ground-Water at Site O, SSDRA, Sauget, Illinois.

Well Designation:	EE-21		EE-22		EE-23		EE-24		EE-25	
Date:	7/14/87		7/14/87		7/14/87		7/14/87		7/14/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Acid Extractable Organic Compounds Concentrations are in ug/L										
2-chlorophenol	<3.3	ND	81.5	58 J	<3.5	ND	<3.4	ND	<3.6	ND
2,4-dichlorophenol	<2.7	ND	90.7	ND	<2.9	ND	3.9	ND	<2.8	ND
2,4-dimethylphenol	<2.7	ND	85.1	400	<2.9	ND	<2.8	ND	<2.8	ND
4,6-dinitro-o-cresol	<24	ND	<510	ND	<26	ND	<24	ND	<25	ND
2,4-dinitrophenol	<42	ND	<890	ND	<45	ND	<43	ND	<44	ND
2-nitrophenol	<3.6	ND	<77	ND	<3.8	ND	<3.7	ND	<3.8	ND
4-nitrophenol	<2.4	ND	<51	ND	<2.6	ND	3.0	ND	<2.5	ND
p-chloro-m-cresol	<3.0	ND	<64	ND	<3.2	ND	<3.1	ND	<3.1	ND
pentachlorophenol	<3.6	ND	1,130	ND	<3.8	ND	<3.7	ND	<3.8	ND
phenol	<1.5	ND	759	1,100	<1.6	ND	<1.5	ND	<1.6	ND
2,4,6-trichlorophenol	<2.7	ND	66.9	ND	<2.9	ND	<2.8	ND	<2.8	ND
Sub Total 1	0	0	2,213.2	1,558	0	0	6.9	0	0	0
Non-Priority Pollutant Acid Extractable Organic Compounds										
2-methylphenol	<10	ND	<210	120	<11	ND	<10	ND	<10	ND
4-methylphenol	<10	ND	454	1,100	<11	ND	<10	ND	<10	ND
benzoic acid	<10	ND	<210	ND	<11	ND	<10	ND	<10	ND
2,4,5-trichlorophenol	<10	ND	<210	ND	<11	ND	<10	ND	<10	ND
Sub Total 2	0	13	454	1,220	0	0	0	0	0	0
Total Acid Compounds Analyzed	0	13	2,667.2	2,778	0	0	6.9	0	0	0

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 3A Summary of Base/Neutral Extractable Organic Compounds in Ground Water at Site O, SSDRA, Sauget, Illinois.

Well Designation:	EE-21		EE-22		EE-23		EE-24		EE-25	
Date:	7/14/87		7/14/87		7/14/87		7/14/87		7/14/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Base/Neutral Extractable Organic Compounds Concentrations are in ug/L										
acenaphthene	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
acenapthylene	<3.6	ND	<37	ND	<3.7	ND	<3.6	ND	<3.6	ND
anthracene	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
benzidine	<45	NA	<470	NA	<46	NA	<45	NA	<46	NA
benzo(a)anthracene	<8.0	ND	<83	ND	<8.2	ND	<8.0	ND	<8.1	ND
benzo(a)pyrene	<2.6	ND	<27	ND	<2.6	ND	<2.6	ND	<2.6	ND
benzo(b)fluoroanthene	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
benzo(ghi)perylene	<4.2	ND	<44	ND	<4.3	ND	<4.2	ND	<4.3	ND
benzo(k)fluoranthene	<3.6	ND	<37	ND	<3.7	ND	<3.6	ND	<3.6	ND
bis(2-chloroethoxy)methane	<5.4	ND	<56	ND	<5.6	ND	<5.4	ND	<5.5	ND
bis(2-chloroethyl) ether	<5.8	ND	<61	91 J	<6.0	ND	<5.8	ND	<5.9	ND
bis(2-chloroisopropyl) ether	<5.8	ND	<61	ND	<6.0	ND	<5.8	ND	<5.9	ND
bis(2-ethylhexyl) phthalate	<10	ND	318	ND	<11	ND	<10	ND	<10	ND
4-bromophenyl phenyl ether	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
butyl benzyl phthalate	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
2-chloronaphthalene	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
4-chlorophenyl phenyl ether	<4.3	ND	<45	ND	<4.4	ND	<4.3	ND	<4.4	ND
chrysene	<2.6	ND	<27	ND	<2.6	ND	<2.6	ND	<2.6	ND
dibenzo(a,h)anthracene	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
1,2-dichlorobenzene	<1.9	ND	30,100	11,000 E	<2.0	ND	<1.9	ND	<2.0	ND
1,3-dichlorobenzene	<1.9	ND	<20	290	<2.0	ND	<1.9	ND	<2.0	ND
1,4-dichlorobenzene	<4.5	ND	39,100	15,000 E	<4.6	ND	<4.5	ND	<4.6	ND
3,3'-dichlorobenzidine	<17	ND	<180	ND	<17	ND	<17	ND	<17	ND
diethyl phthalate	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
dimethyl phthalate	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
di-n-butyl phthalate	<10	ND	251	ND	<11	ND	<10	7 J	<10	ND
2,4-dinitrotoluene	<5.8	ND	<61	ND	<6.0	ND	<5.8	ND	<5.9	ND
2,6-dinitrotoluene	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
di-n-octyl phthalate	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
1,2-diphenylhydrazine	<10	NA	<110	NA	<11	NA	<10	NA	<10	NA
fluoranthene	<2.2	ND	<23	ND	<2.3	ND	<2.2	ND	<2.3	ND
fluorene	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
hexachlorobenzene	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
hexachlorobutadiene	<.9	ND	<9.6	ND	<.95	ND	<.9	ND	<.94	ND
hexachlorocyclopentadiene	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
hexachloroethane	<1.6	ND	<17	ND	<1.7	ND	<1.6	ND	<1.7	ND
indeno(1,2,3-c,d)pyrene	<4.8	ND	<50	ND	<4.9	ND	<4.8	ND	<4.9	ND
isophorone	<2.2	ND	<23	ND	<2.3	ND	<2.2	ND	<2.3	ND
naphthalene	<1.6	ND	738	100	<1.7	ND	<1.6	ND	<1.7	ND
nitrobenzene	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
n-nitrosodimethylamine	<10	NA	<110	NA	<11	NA	<10	NA	<10	NA
n-nitrosodi-n-propylamine	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
n-nitrosodiphenylamine	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
phenanthrene	<5.5	ND	<57	ND	<5.7	ND	<5.5	ND	<5.6	ND
pyrene	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
1,2,4-trichlorobenzene	<1.9	ND	2,100	200	<2.0	ND	<1.9	ND	<2.0	ND
Sub Total 1	0	0	72,607	26,681	0	0	0	7	0	0

Table 3A Summary of Base/Neutral Extractable Organic Compounds in Ground Water at Site O, SSDRA, Sauget, Illinois.

Well Designation:	EE-21		EE-22		EE-23		EE-24		EE-25	
Date:	7/14/87		7/14/87		7/14/87		7/14/87		7/14/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
Non-Priority Pollutant Base/Neutral Extractable Organic Compounds										
benzyl alcohol	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
aniline	<10	NA	173	NA	<11	NA	<10	NA	<10	NA
4-chloroaniline	<10	ND	1,410	ND	<11	ND	<10	ND	<10	ND
2-methylnaphthalene	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
2-nitroaniline	<10	NA	<110	NA	<11	NA	<10	NA	<10	NA
3-nitroaniline	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
dibenzofuran	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
4-nitroaniline	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
Sub Total 2	0	0	1,583	0	0	0	0	0	0	0
Total Base/Neutral Compounds	0	0	74,190	26,681	0	0	0	7	0	0

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 4A Summary of Pesticide/PCB Compounds in Ground Water at Site O, SSDRA, Sauget, Illinois.

Well Designation:	EE-21		EE-22		EE-23		EE-24		EE-25	
Date:	7/14/87		7/14/87		7/14/87		7/14/87		7/14/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Pesticide/PCB Compounds Concentrations are in ug/L										
aldrin	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
alpha-BHC	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
beta-BHC	<4.5	ND	<47	ND	<4.6	ND	<4.5	ND	<4.6	ND
gamma-BHC	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
delta-BHC	<3.2	ND	<33	ND	<3.3	ND	<3.2	ND	<3.2	ND
chlordane	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
4,4'-DDT	<2.9	ND	<30	ND	<2.9	ND	<2.9	ND	<2.9	ND
4,4'-DDE	<5.7	ND	<60	ND	<5.9	ND	<5.7	ND	<5.8	ND
4,4'-DDD	<4.8	ND	<50	ND	<4.9	ND	<4.8	ND	<4.9	ND
dieldrin	<2.6	ND	<27	ND	<2.6	ND	<2.6	ND	<2.6	ND
endosulfan I	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
endosulfan II	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
endosulfan sulfate	<5.7	ND	<60	ND	<5.9	ND	<5.7	ND	<5.8	ND
endrin	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
endrin aldehyde	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
heptachlor	<1.9	ND	<20	ND	<2.0	ND	<1.9	ND	<2.0	ND
heptachlor epoxide	<2.2	ND	<23	ND	<2.3	ND	<2.2	ND	<2.3	ND
PCB-1016	<37	ND	890	ND	<38	ND	<37	ND	<38	ND
PCB-1221	<37	ND	<380	ND	<38	ND	<37	ND	<38	ND
PCB-1232	<37	ND	<380	ND	<38	ND	<37	ND	<38	ND
PCB-1242	<37	ND	<380	ND	<38	ND	<37	ND	<38	ND
PCB-1248	<37	ND	<380	ND	<38	ND	<37	ND	<38	ND
PCB-1254	<37	ND	<380	ND	<38	ND	<37	ND	<38	ND
PCB-1260	<37	ND	<380	ND	<38	ND	<37	ND	<38	ND
toxaphene	<10	ND	<110	ND	<11	ND	<10	ND	<10	ND
Total Pesticide/PCB Compounds	0	0	890	0	0	0	0	0	0	0

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 5A Summary of Metals and Miscellaneous Parameters in Ground Water at Site O, SSDRA, Sauget, Illinois.

Well Designation:	EE-21		EE-22		EE-23		EE-24		EE-25	
Date:	7/14/87		7/14/87		7/14/87		7/14/87		7/14/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Metals (Concentrations are in mg/L, except where noted)										
antimony	<.14	ND	<.14	ND	<.14	ND	<.14	ND	<.14	ND
arsenic	<.010	ND	0.12	0.123	0.017	0.017	0.018	0.015	<.010	ND
beryllium	<.00036	ND	<.00036	ND	<.00036	ND	<.00036	ND	<.00036	ND
cadmium	<.0029	ND	<.0029	0.011	<.0029	ND	<.0029	ND	<.0029	ND
chromium	<.017	ND	<.017	ND	<.017	ND	<.017	ND	<.017	ND
copper	<.012	ND	<.012	ND	<.012	ND	<.012	ND	<.012	ND
lead	<.083	3.27	<.083	6.35	<.083	ND	<.083	ND	<.083	ND
mercury	<.00025	ND	<.00025	ND	<.00025	ND	<.00025	ND	<.00025	ND
nickel	<.012	ND	<.012	ND	<.012	ND	<.012	ND	<.012	ND
selenium	<.005	ND	<.005	ND	<.005	ND	<.005	ND	<.005	ND
silver	<.0093	ND	<.0093	ND	<.0093	ND	<.0093	ND	<.0093	ND
thallium	<.005	ND	<.005	ND	<.005	ND	<.005	ND	<.005	ND
zinc	0.061	0.057	<.0068	0.04	0.029	[0.015]	0.073	0.024	0.0095	ND
Non-Priority Pollutant Metals										
aluminum	<.066	0.2	<.066	ND	<.066	ND	<.066	ND	<.066	ND
barium	0.134	[0.035]	0.477	0.5	0.164	[0.152]	0.217	0.204	0.091	ND
cobalt	<.028	ND	<.028	ND	<.028	ND	<.028	ND	<.028	ND
tin	<.0081	ND	<.0081	ND	<.0081	ND	<.0081	ND	<.0081	ND
vanadium	<.0014	ND	<.0014	0.055	<.0014	ND	<.0014	ND	<.0014	ND
boron	0.37	ND	0.46	ND	0.42	ND	0.32	ND	<.35	ND
iron	17.7	15.9	202	171	19.1	16.8	40.3	27.2	NA	ND
manganese	3.67	ND	7.23	ND	1.44	1.33	5.49	1.52	1.61	ND
Miscellaneous Parameters										
pH (units)	7.4	U	7.5	U	7.6	U	7.4	U	7.8	U
spec. conductance (umhos/cm)	1400	U	4000	U	1300	U	4200	U	1200	U
temperature (deg. F.)	NA	U	NA	U	NA	U	NA	U	NA	U
Total Cyanide	<.025	0.020	0.032	ND	<.025	ND	<.025	ND	<.025	ND

ND Not detected.
ND Not analyzed.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 1B Summary of Volatile Organic Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	B-25A		B-26A		B-28A		P-1	
Date:	3/25/87		3/25/87		3/25/87		3/25/87	
USEPA Priority Pollutant Volatile Organic Compounds Concentrations are in ug/L	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
acrolein	<1,000	NA	<100	NA	<1,000	NA	<100	NA
acrylonitrile	<1,000	NA	<100	NA	<1,000	NA	<100	NA
benzene	92	ND	42.3	41	<44	ND	<4.4	2 J
bis(chloromethyl) ether	<100	NA	<10	NA	<100	NA	<10	NA
bromoform	<47	ND	<4.7	ND	<47	ND	<4.7	ND
carbon tetrachloride	<28	ND	<2.8	ND	<28	ND	<2.8	ND
chlorobenzene	8,210	8,100	158	190	929	990	454	350 E
chlorodibromomethane	<31	ND	<3.1	ND	<31	ND	<3.1	ND
chloroethane	200	ND	<10	ND	<100	ND	<10	ND
2-chloroethylvinyl ether	<100	ND	<10	ND	<100	ND	<10	ND
chloroform	70.7	ND	<1.6	ND	<16	ND	<1.6	ND
dichlorobromomethane	<22	ND	<2.2	ND	<22	ND	<2.2	ND
dichlorodifluoromethane	<100	ND	<10	ND	<100	ND	<10	ND
1,1-dichloroethane	<47	ND	8.86	3 J	<47	ND	<4.7	ND
1,2-dichloroethane	16,500	16,000	<2.8	ND	<28	ND	<2.8	ND
1,1-dichloroethylene	<28	ND	<2.8	7	<28	ND	<2.8	ND
1,2-dichloropropane	<60	ND	<6.0	ND	<60	ND	<6.0	ND
cis-1,3-dichloropropylene	<50	ND	<5.0	ND	<50	ND	<5.0	ND
trans-1,3-dichloropropylene	<100	ND	<10	ND	<100	ND	<10	ND
ethylbenzene	<72	ND	<7.2	2 J	<72	ND	<7.2	ND
methyl bromide	<100	ND	<10	ND	<100	ND	<10	ND
methyl chloride	<100	NA	<10	NA	<100	NA	<10	NA
methylene chloride	<28	ND	<2.8	ND	<28	ND	<2.8	ND
1,1,2,2-tetrachloroethane	<69	ND	<6.9	ND	<69	ND	<6.9	ND
tetrachloroethylene	<41	ND	<4.1	ND	<41	ND	<4.1	ND
toluene	465	760 J	<6.0	7 B	<60	ND	<6.0	ND
1,2-trans-dichloroethylene	<16	ND	4.64	ND	<16	ND	<1.6	ND
1,1,1-trichloroethane	<38	ND	<3.8	ND	<38	ND	<3.8	ND
1,1,2-trichloroethane	<50	ND	<5.0	ND	<50	ND	<5.0	ND
trichloroethylene	<19	ND	<1.9	ND	<19	ND	<1.9	ND
trichlorofluoromethane	<100	NA	<10	NA	<100	NA	<10	NA
vinyl chloride	<100	ND	<10	ND	<100	ND	<10	ND
Sub Total 1	25,537.7	24,860	213.8	250	929	990	454	352

NA Not analyzed.
ND Not detected.
B Compound detected in blank sample.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 1B Summary of Volatile Organic Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	B-25A		B-26A		B-28A		P-1	
Date:	3/25/87		3/25/87		3/25/87		3/25/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
Non-Priority Pollutant Volatile Organic Compounds								
acetone	19,400	1,600 B	<10	3 BJ	<100	71 B	30.4	ND
methyl ethyl ketone	<100	ND	<10	ND	<100	ND	<10	ND
carbon disulfide	<100	ND	<10	ND	<100	ND	<10	ND
2-hexanone	<100	ND	<10	ND	<100	ND	<10	ND
methyl-iso-butyl ketone	206	ND	<10	ND	<100	ND	<10	ND
styrene	<100	ND	<10	ND	<100	ND	<10	ND
m-xylene	<100	ND	<10	ND	<100	ND	<10	ND
o- and p-xylenes	<100	ND	<10	7	<100	ND	<10	ND
Sub Total 2	19,606	1600	0	10	0	71	30	0
Total VOCs Analyzed	45,143.7	26,460	213.8	260	929	1,061	484.4	352

NA Not analyzed.
ND Not detected.
B Compound detected in blank sample.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 1B Summary of Volatile Organic Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	P-7		P-11	
Date:	3/25/87		3/25/87	
	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Volatile Organic Compounds Concentrations are in ug/L				
acrolein	<10,000	NA	<100	NA
acrylonitrile	<10,000	NA	<100	NA
benzene	1,420	1,500	120	150
bis(chloromethyl) ether	<1,000	NA	<10	NA
bromoform	<470	ND	<4.7	ND
carbon tetrachloride	<280	ND	<2.8	ND
chlorobenzene	4,310	5,000	483	570
chlorodibromomethane	<310	ND	<3.1	ND
chloroethane	<1,000	ND	<10	ND
2-chloroethylvinyl ether	<1,000	ND	<10	ND
chloroform	<160	ND	<1.6	ND
dichlorobromomethane	<220	ND	<2.2	ND
dichlorodifluoromethane	<1,000	ND	<10	ND
1,1-dichloroethane	<470	ND	<4.7	ND
1,2-dichloroethane	<280	ND	<2.8	ND
1,1-dichloroethylene	<280	ND	<2.8	ND
1,2-dichloropropane	<600	ND	<6.0	ND
cis-1,3-dichloropropylene	<500	ND	<5.0	ND
trans-1,3-dichloropropylene	<1,000	ND	<10	ND
ethylbenzene	<720	ND	<7.2	ND
methyl bromide	<1,000	ND	<10	ND
methyl chloride	<1,000	NA	<10	NA
methylene chloride	<280	ND	<2.8	ND
1,1,2,2-tetrachloroethane	<690	ND	<6.9	ND
tetrachloroethylene	<410	ND	<4.1	ND
toluene	<600	480	<6.0	ND
1,2-trans-dichloroethylene	<160	ND	<1.6	ND
1,1,1-trichloroethane	<380	ND	<3.8	ND
1,1,2-trichloroethane	<500	ND	<5.0	ND
trichloroethylene	<190	ND	<1.9	ND
trichlorofluoromethane	<1,000	NA	<10	NA
vinyl chloride	<1,000	ND	<10	ND
Sub Total 1	5,730	6,980	603	720

NA Not analyzed.
ND Not detected.
B Compound detected in blank sample.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 1B Summary of Volatile Organic Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	P-7		P-11	
Date:	3/25/87		3/25/87	
	G&M	E&E	G&M	E&E
Non-Priority Pollutant Volatile Organic Compounds				
acetone	3,120	1,700 B	22.9	26 BJ
methyl ethyl ketone	<1,000	ND	<10	ND
carbon disulfide	<1,000	ND	<10	ND
2-hexanone	<1,000	ND	<10	ND
methyl-iso-butyl ketone	<1,000	ND	<10	ND
styrene	<1,000	ND	<10	ND
m-xylene	<1,000	ND	<10	ND
o- and p-xylenes	<1,000	95 J	<10	ND
Sub Total 2	3,120	1,795	22.9	26
Total VOCs Analyzed	8,850	8,775	625.9	746

NA Not analyzed.
ND Not detected.
B Compound detected in blank sample.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 2B Summary of Acid Extractable Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	B-25A		B-26A		B-28A		P-1	
Date:	3/25/87		3/25/87		3/25/87		3/25/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Acid Extractable Organic Compounds Concentrations are in ug/L								
2-chlorophenol	116,000	14,000 E	10.3	8 J	10.5	8 J	5.61	4 J
2,4-dichlorophenol	182,000	14,000 E	<2.7	ND	<2.7	ND	<3.0	ND
2,4-dimethylphenol	1,620	160	<2.7	ND	<2.7	ND	<3.0	ND
4,6-dinitro-o-cresol	<13,000	ND	<24	ND	<24	ND	<27	ND
2,4-dinitrophenol	<24,000	ND	<42	ND	<42	ND	<47	ND
2-nitrophenol	<2,000	ND	<3.6	ND	<3.6	ND	<4.0	ND
4-nitrophenol	<1,300	ND	<2.4	ND	<2.4	ND	<2.7	ND
p-chloro-m-cresol	<1,700	ND	<3	ND	<3	ND	<3.3	ND
pentachlorophenol	<2,000	ND	<3.6	ND	<3.6	ND	<4.0	ND
phenol	403,000	6,000 E	5.42	ND	<1.5	ND	<1.7	ND
2,4,6-trichlorophenol	25,900	1,500	<2.7	ND	<2.7	ND	<3.0	ND
Sub Total 1	728,520	35,660	15.72	8	10.5	8	5.61	4
Non-Priority Pollutant Acid Extractable Organic Compounds								
2-methylphenol	<5,600	ND	<10	ND	<10	ND	<11	ND
4-methylphenol	47,000	6,100	<10	ND	<10	ND	<11	ND
benzoic acid	50,800	6,800	<10	ND	<10	ND	<11	ND
2,4,5-trichlorophenol	<5,600	ND	<10	ND	<10	ND	<11	ND
Sub Total 2	97,800	12,900	0	0	0	0	0	0
Total Acid Compounds Analyzed	826,320	48,560	15.72	8	10.5	8	5.61	4

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 2B Summary of Acid Extractable Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	P-7		P-11	
Date:	3/25/87		3/25/87	
	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Acid Extractable Organic Compounds Concentrations are in ug/L				
2-chlorophenol	1,660	2,100	<3.6	ND
2,4-dichlorophenol	<30	5,500	<3.0	ND
2,4-dimethylphenol	<30	ND	<3.0	ND
4,6-dinitro-o-cresol	<260	ND	<26	ND
2,4-dinitrophenol	<460	ND	<46	ND
2-nitrophenol	<40	ND	<4.0	ND
4-nitrophenol	130	ND	<2.6	ND
p-chloro-m-cresol	<33	ND	<3.3	ND
pentachlorophenol	<40	ND	<4.0	ND
phenol	11,400	25,000 E	5.13	ND
2,4,6-trichlorophenol	2,170	2,100	<3	ND
Sub Total 1	15,360	34,700	5.13	0
Non-Priority Pollutant Acid Extractable Organic Compounds				
2-methylphenol	<110	ND	<11	ND
4-methylphenol	<110	120 J	<11	ND
benzoic acid	1,720	270 J	<11	ND
2,4,5-trichlorophenol	<110	ND	<11	ND
Sub Total 2	1,720	390	0	0
Total Acid Compounds Analyzed	17,080	35,090	5.13	0

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 3B Summary of Base/Neutral Extractable Organic Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	B-25A		B-26A		B-28A		P-1	
Date:	3/25/87		3/25/87		3/25/87		3/25/87	
USEPA Priority Pollutant Base/Neutral Extractable Organic Compounds Concentrations are in ug/L	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
acenaphthene	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
acenapthylene	<390	ND	<3.9	ND	<3.8	ND	<3.9	ND
anthracene	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
benzidine	<4,900	NA	<49	NA	<47	NA	<49	NA
benzo(a)anthracene	<880	ND	<8.7	ND	<8.4	ND	<8.7	ND
benzo(a)pyrene	<280	ND	<2.8	ND	<2.7	ND	<2.8	ND
benzo(b)fluoroanthene	<1,100	ND	<11	ND	<11	ND	<11	ND
benzo(ghi)perylene	<460	ND	<4.6	ND	<4.4	ND	<4.6	ND
benzo(k)fluoranthene	<390	ND	<3.9	ND	<3.8	ND	<3.9	ND
bis(2-chloroethoxy) methane	<600	ND	<5.9	ND	<5.7	ND	<5.9	ND
bis(2-chloroethyl) ether	<640	ND	<6.3	ND	<6.1	ND	<6.3	ND
bis(2-chloroisopropyl) ether	<640	ND	<6.3	ND	<6.1	ND	<6.3	ND
bis(2-ethylhexyl) phthalate	<1,100	ND	13.1	37	<11	4 J	<11	ND
4-bromophenyl phenyl ether	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
butyl benzyl phthalate	<1,100	ND	<11	ND	<11	ND	<11	ND
2-chloronaphthalene	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
4-chlorophenyl phenyl ether	<470	ND	<4.7	ND	<4.5	ND	<4.7	ND
chrysene	<280	ND	<2.8	ND	<2.7	ND	<2.8	ND
dibenzo(a,h)anthracene	<1,100	ND	<11	ND	<11	ND	<11	ND
1,2-dichlorobenzene	8,800	91 J	2.76	1 J	<2.0	ND	<2.1	ND
1,3-dichlorobenzene	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
1,4-dichlorobenzene	<490	ND	<4.9	4 J	<4.7	ND	10.2	8 J
3,3-dichlorobenzidine	<1,900	ND	<18	ND	<18.3	ND	<18	ND
diethyl phthalate	<1,100	ND	<11	ND	<11	ND	<11	ND
dimethyl phthalate	<1,100	ND	<11	ND	<11	ND	<11	ND
di-n-butyl phthalate	<1,100	ND	<11	ND	<11	ND	<11	7 J
2,4-dinitrotoluene	<640	ND	<6.3	ND	<6.1	ND	<6.3	ND
2,6-dinitrotoluene	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
di-n-octyl phthalate	<1,100	ND	<11	40	<11	4 J	<11	ND
1,2-diphenylhydrazine	<1,100	NA	<11	NA	<11	NA	<11	NA
fluoranthene	<250	ND	<2.4	ND	<2.4	ND	<2.4	ND
fluorene	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
hexachlorobenzene	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
hexachlorobutadiene	<100	ND	<1.0	ND	<.97	ND	<1.0	ND
hexachlorocyclopentadiene	<1,100	ND	<11	ND	<11	ND	<11	ND
hexachloroethane	<180	ND	<1.8	ND	<1.7	ND	<1.8	ND
indeno(1,2,3-c,d)pyrene	<530	ND	<5.2	ND	<5.1	ND	<5.2	ND
isophorone	<250	ND	<2.4	ND	<2.4	ND	<2.4	ND
naphthalene	872	ND	<1.8	ND	<1.7	ND	<1.8	ND
nitrobenzene	12,900	420	15.8	35	<2.0	ND	<2.1	ND
n-nitrosodimethylamine	<1,100	NA	<11	NA	<11	NA	<11	NA
n-nitrosodi-n-propylamine	<1,100	ND	<11	ND	<11	ND	<11	ND
n-nitrosodiphenylamine	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
phenanthrene	<610	ND	<6.0	ND	<5.8	ND	<6.0	ND
pyrene	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
1,2,4-trichlorobenzene	2,170	ND	<2.1	ND	<2.0	ND	<2.1	ND
Sub Total 1	24,742	511	31.66	117	0	8	10.2	15

Table 3B Summary of Base/Neutral Extractable Organic Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	B-25A		B-26A		B-28A		P-1	
Date:	3/25/87		3/25/87		3/25/87		3/25/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
Non-Priority Pollutant Base/Neutral Extractable Organic Compounds								
benzyl alcohol	1,830	ND	<11	ND	<11	ND	<11	ND
aniline	<1,000	NA	20	NA	<11	NA	<11	NA
4-chloroaniline	5,380	ND	710	680	<11	ND	<11	ND
2-methylnaphthalene	<1,000	ND	<11	ND	<11	ND	<11	ND
2-nitroaniline	1,160	NA	<11	NA	<11	NA	<11	NA
3-nitroaniline	<1,100	ND	<11	ND	<11	ND	<11	ND
dibenzofuran	<1,100	ND	<11	ND	<11	ND	<11	ND
4-nitroaniline	<1,100	ND	<11	ND	<11	ND	<11	ND
Sub Total 2	8,370	0	730	680	0	0	0	0
Total Base/Neutral Compounds Analyzed	33,112	511	761.66	797	0	8	10.2	15

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 3B Summary of Base/Neutral Extractable Organic Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	P-7		P-11	
Date:	3/25/87		3/25/87	
	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Base/Neutral Extractable Organic Compounds Concentrations are in ug/L				
acenaphthene	<2.1	ND	<2.1	ND
acenapthylene	<3.8	ND	<3.8	ND
anthracene	<2.1	ND	<2.1	ND
benzidine	<48	NA	<48	NA
benzo(a)anthracene	<8.6	ND	<8.6	ND
benzo(a)pyrene	<2.7	ND	<2.7	ND
benzo(b)fluoroanthene	<11	ND	<11	ND
benzo(ghi)perylene	<4.5	ND	<4.5	ND
benzo(k)fluoranthene	<3.8	ND	<3.8	ND
bis(2-chloroethoxy) methane	<5.8	ND	<5.8	ND
bis(2-chloroethyl) ether	<6.3	ND	<6.3	ND
bis(2-chloroisopropyl) ether	<6.3	ND	<6.3	ND
bis(2-ethylhexyl) phthalate	<11	ND	<11	ND
4-bromophenyl phenyl ether	<2.1	ND	<2.1	ND
butyl benzyl phthalate	<11	ND	<11	ND
2-chloronaphthalene	940	ND	<2.1	ND
4-chlorophenyl phenyl ether	<4.6	ND	<4.6	ND
chrysene	<2.7	ND	<2.7	ND
dibenzo(a,h)anthracene	<11	ND	<11	ND
1,2-dichlorobenzene	346	340	5.42	ND
1,3-dichlorobenzene	7.00	ND	<2.1	ND
1,4-dichlorobenzene	585	550	82.3	54 J
3,3-dichlorobenzidine	<18.7	ND	<18.7	ND
diethyl phthalate	<11	ND	<11	ND
dimethyl phthalate	<11	ND	<11	ND
di-n-butyl phthalate	<11	ND	<11	ND
2,4-dinitrotoluene	<6.3	ND	<6.3	ND
2,6-dinitrotoluene	<2.1	ND	<2.1	ND
di-n-octyl phthalate	<11	ND	<11	ND
1,2-diphenylhydrazine	<11	NA	<11	NA
fluoranthene	<2.4	ND	<2.4	ND
fluorene	<2.1	ND	<2.1	ND
hexachlorobenzene	<2.1	ND	<2.1	ND
hexachlorobutadiene	<.99	ND	<.99	ND
hexachlorocyclopentadiene	<11	ND	<11	ND
hexachloroethane	<1.8	850	<1.8	ND
indeno(1,2,3-c,d)pyrene	<5.2	ND	<5.2	ND
isophorone	<2.4	82 J	<2.4	ND
naphthalene	7.95	ND	<1.8	ND
nitrobenzene	113	ND	<2.1	ND
n-nitrosodimethylamine	<11	NA	<11	NA
n-nitrosodi-n-propylamine	<11	ND	<11	ND
n-nitrosodiphenylamine	<2.1	ND	<2.1	ND
phenanthrene	<5.9	ND	<5.9	ND
pyrene	<2.1	ND	<2.1	ND
1,2,4-trichlorobenzene	33.4	ND	<2.1	ND
Sub Total 1	2032.35	1822	87.72	54

Table 3B Summary of Base/Neutral Extractable Organic Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	P-7		P-11	
Date:	3/25/87		3/25/87	
	G&M	E&E	G&M	E&E
Non-Priority Pollutant Base/Neutral Extractable Organic Compounds				
benzyl alcohol	171	750	<11	ND
aniline	6,360	NA	<11	NA
4-chloroaniline	15,000	25,000 E	4,020	4,100
2-methylnaphthalene	<11	200	<11	ND
2-nitroaniline	<11	NA	<11	NA
3-nitroaniline	<11	ND	<11	ND
dibenzofuran	<11	ND	<11	ND
4-nitroaniline	62.2	ND	<11	ND
Sub Total 2	21,593.2	25950	4,020	4100
Total Base/Neutral Compounds Analyzed	23,625.55	27772	4,107.72	4154

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 4B Summary of Pesticide/PCB Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	B-25A		B-26A		B-28A		P-1	
Date:	3/25/87		3/25/87		3/25/87		3/25/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Pesticide/PCB Compounds Concentrations are in ug/L								
aldrin	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
alpha-BHC	<1,100	ND	<11	ND	<11	ND	<11	ND
beta-BHC	<490	ND	<4.9	ND	<4.7	ND	<4.9	ND
gamma-BHC	<1,100	ND	<11	ND	<11	ND	<11	ND
delta-BHC	<350	ND	<3.4	ND	<3.3	ND	<3.4	ND
chlordane	<1,100	ND	<11	ND	<11	ND	<11	ND
4,4'-DDT	<310	ND	<3.1	ND	<3.0	ND	<3.1	ND
4,4'-DDE	<630	ND	<6.2	ND	<6.0	ND	<6.2	ND
4,4'-DDD	<530	ND	<5.2	ND	<5.1	ND	<5.2	ND
dieldrin	<280	ND	<2.8	ND	<2.7	ND	<2.8	ND
endosulfan I	<1,100	ND	<11	ND	<11	ND	<11	ND
endosulfan II	<1,100	ND	<11	ND	<11	ND	<11	ND
endosulfan sulfate	<630	ND	<6.2	ND	<6.0	ND	<6.2	ND
endrin	<1,100	ND	<11	ND	<11	ND	<11	ND
endrin aldehyde	<1,100	ND	<11	ND	<11	ND	<11	ND
heptachlor	<210	ND	<2.1	ND	<2.0	ND	<2.1	ND
heptachlor epoxide	<250	ND	<2.4	ND	<2.4	ND	<2.4	ND
PCB-1016	<4,000	ND	<40	ND	<39	ND	<40	ND
PCB-1221	<4,000	ND	<40	ND	<39	ND	<40	ND
PCB-1232	<4,000	ND	<40	ND	<39	ND	<40	ND
PCB-1242	<4,000	ND	<40	ND	<39	ND	<40	ND
PCB-1248	<4,000	ND	<40	ND	<39	ND	<40	ND
PCB-1254	<4,000	ND	<40	ND	<39	ND	<40	ND
PCB-1260	<4,000	ND	<40	ND	<39	ND	<40	ND
toxaphene	<1,100	ND	<11	ND	<11	ND	<11	ND
Total Pesticide/PCB Compounds	0	0	0	0	0	0	0	0

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

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Table 4B Summary of Pesticide/PCB Compounds in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	P-7		P-11	
Date:	3/25/87		3/25/87	
	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Pesticide/PCB Compounds Concentrations are in ug/L				
aldrin	<2.1	ND	<2.1	ND
alpha-BHC	<11	ND	<11	ND
beta-BHC	<4.8	ND	<4.8	ND
gamma-BHC	<11	ND	<11	ND
delta-BHC	<3.4	ND	<3.4	ND
chlordane	<11	ND	<11	ND
4,4'-DDT	<3.1	ND	<3.1	ND
4,4'-DDE	<6.2	ND	<6.2	ND
4,4'-DDD	<5.2	ND	<5.2	ND
dieldrin	<2.7	ND	<2.7	ND
endosulfan I	<11	ND	<11	ND
endosulfan II	<11	ND	<11	ND
endosulfan sulfate	<6.2	ND	<6.2	ND
endrin	<11	ND	<11	ND
endrin aldehyde	<11	ND	<11	ND
heptachlor	<2.1	ND	<2.1	ND
heptachlor epoxide	<2.4	ND	<2.4	ND
PCB-1016	<40	ND	<40	ND
PCB-1221	<40	ND	<40	ND
PCB-1232	<40	ND	<40	ND
PCB-1242	<40	ND	<40	ND
PCB-1248	<40	ND	<40	ND
PCB-1254	<40	ND	<40	ND
PCB-1260	<40	ND	<40	ND
toxaphene	<11	ND	<11	ND
Total Pesticide/PCB Compounds	0	0	0	0

ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.

Table 5B Summary of Metals and Miscellaneous Parameters in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	B-25A		B-26A		B-28A		P-1	
Date:	3/25/87		3/25/87		3/25/87		3/25/87	
	G&M	E&E	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Metals (Concentrations are in mg/L, except where noted)								
antimony	NA	NA	<.057	ND	<.057	ND	<.057	ND
arsenic	NA	NA	0.054	0.048	0.077	0.041	0.042	0.034
beryllium	NA	NA	<.00052	ND	<.00052	ND	<.00052	ND
cadmium	NA	NA	<.0025	ND	<.0025	ND	<.0025	ND
chromium	NA	NA	<.013	ND	<.013	ND	<.013	ND
copper	NA	NA	<.0052	ND	<.0052	ND	<.0052	ND
lead	NA	NA	<.050	ND	<.0050	ND	<.0050	ND
mercury	NA	NA	<.00022	ND	<.00022	ND	<.00022	ND
nickel	NA	NA	<.0096	ND	<.0096	ND	<.0096	ND
selenium	NA	NA	<.0050	ND	<.0050	ND	<.0050	ND
silver	NA	NA	<.011	ND	<.011	ND	<.011	ND
thallium	NA	NA	<.0050	ND	<.0050	ND	<.0050	ND
zinc	NA	NA	0.036	0.041 R	0.023	0.024 R	0.050	0.054 R
Non-Priority Pollutant Metals								
aluminum	NA	NA	<.088	ND	<.088	ND	<.088	ND
barium	NA	NA	0.171	[.194]	0.110	[.123]	0.257	0.44
cobalt	NA	NA	<.026	ND	<.026	ND	<.026	ND
tin	NA	NA	<.052	ND	<.052	ND	<.052	ND
vanadium	NA	NA	<.011	ND	<.011	ND	<.011	ND
boron	NA	NA	21.2	ND	29.1	ND	4.16	ND
iron	NA	NA	39.5	26.9	30.1	20.8	16.3	10.8
manganese	NA	NA	4.65	3.53	8.74	6.84	2.64	2.19
Miscellaneous Parameters								
pH (units)	NA	NA	6.5	U	7.6	U	7.0	U
spec. conductance (umhos/cm)	NA	NA	2300	U	2800	U	2200	U
temperature (deg. fahrenheit)	NA	NA	50	U	52	U	50	U
total cyanide	0.035	NA	<.025	ND	<.025	ND	<.025	ND

U Unavailable.
ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
R Spike sample recovery not within control limits.

Table 5B Summary of Metals and Miscellaneous Parameters in Ground Water at Site R, Monsanto Company, W.G. Krummrich Plant, Sauget, Illinois.

Well Designation:	P-7		P-11	
Date:	3/25/87		3/25/87	
	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Metals (Concentrations are in mg/L, except where noted)				
antimony	<.057	ND	<.057	ND
arsenic	0.011	ND	0.043	0.035
beryllium	<.00052	ND	<.00052	ND
cadmium	<.0025	ND	<.0025	ND
chromium	<.013	ND	<.013	ND
copper	<.0052	ND	<.0052	ND
lead	<.0050	ND	<.0050	ND
mercury	<.00022	ND	<.00022	ND
nickel	0.033	[.018]	<.0096	ND
selenium	<.0050	ND	<.0050	ND
silver	<.011	ND	<.011	ND
thallium	<.0050	ND	<.0050	ND
zinc	0.120	0.102 R	0.040	0.039
Non-Priority Pollutant Metals				
aluminum	<.088	ND	<.088	ND
barium	0.027	[.027]	0.155	[.168]
cobalt	0.140	0.120	<.026	ND
tin	<.052	ND	<.052	ND
vanadium	0.022	[.018]	<.011	ND
boron	34	ND	2.54	ND
iron	22.4	15.5	16.8	11.8
manganese	14.8	11.2	3.31	2.64
Miscellaneous Parameters				
pH (units)	7.0	U	7.7	U
spec. conductance (umhos/cm)	3400	U	1000	U
temperature (deg. fahrenheit)	50	U	52	U
total cyanide	<.025	ND	<.025	0.014

U Unavailable.
ND Not detected.
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
R Spike sample recovery not within control limits.

Table 1C Summary of Volatile Organic compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-01-59 (Boring #1 / EE-21)		DC-02-60 (Boring #2 / EE-22)		DC-03-61 (Boring #3)	
Sample Depth: (feet below land surface)	15 - 25		20 - 30		10 - 20	
Date:	2/16/87		2/17/87		2/17/87	
	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Volatile Organic Compounds Concentrations are in ug/kg						
Acrolein	<100	NA	<100	NA	<100	NA
Arcylonitrile	<100	NA	<100	NA	<100	NA
Benzene	<4.4	ND	62.8	667	<4.4	24
bis(Chloromethyl)ether	<10	NA	<10	NA	<10	NA
Bromoform	<4.7	ND	<4.7	ND	<4.7	ND
Carbon tetrachloride	<2.8	ND	<2.8	ND	<2.8	ND
Chlorobenzene	<6.0	ND	205	1,667	<6.0	62
Chlorodibromomethane	<3.1	ND	<3.1	ND	<3.1	ND
Chloroethane	<10	ND	<10	ND	<10	ND
2-Chloroethylvinyl ether	<10	ND	<10	ND	<10	ND
Chloroform	<1.6	ND	<1.6	ND	<1.6	ND
Dichlorobromomethane	<2.2	ND	<2.2	ND	<2.2	ND
Dichlorodifluoromethane	<10	NA	<10	NA	<10	NA
1,1-Dichloroethane	<4.7	ND	<4.7	10 J	<4.7	ND
1,2-Dichloroethane	<2.8	ND	<2.8	23	<2.8	ND
1,1-Dichloroethylene	<2.8	ND	<2.8	ND	<2.8	ND
1,2-Dichloropropane	<6.0	ND	<6.0	ND	<6.0	ND
cis-1,3-Dichloropropylene	<5.0	ND	<5.0	ND	<5.0	ND
trans-1,3-Dichloropropylene	<10	ND	<10	ND	<10	ND
Ethylbenzene	<7.2	ND	<7.2	46	<7.2	167
Methyl bromide	<10	ND	<10	ND	<10	ND
Methyl chloride	<10	NA	<10	NA	<10	NA
Methylene chloride	62.8	ND	136	35	67.3	10 J
1,1,2,2-Tetrachloroethane	<6.9	ND	<6.9	28	<6.9	ND
Tetrachloroethylene	<4.1	ND	<4.1	ND	<4.1	ND
Toluene	<6.0	ND	<6.0	ND	<6.0	ND
1,2-trans-Dichloroethylene	<1.6	ND	14.1	192	<1.6	6 J
1,1,1-Trichloroethane	<3.8	ND	<3.8	ND	<3.8	ND
1,1,2-Trichloroethane	<5.0	ND	<5.0	ND	<5.0	ND
Trichloroethylene	<1.9	ND	<1.9	69	<1.9	ND
Trichlorofluoromethane	<10	NA	<10	NA	<10	NA
Vinyl chloride	<10	ND	<10	ND	<10	ND
Sub Total 1:	62.8	0	417.9	2,737	67.3	269

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 1C Summary of Volatile Organic compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	OC-01-59 (Boring #1 / EE-21)		OC-02-60 (Boring #2 / EE-22)		OC-03-61 (Boring #3)	
Sample Depth: (feet below land surface)	15 - 25		20 - 30		10 - 20	
Date:	2/16/87		2/17/87		2/17/87	
	G&M	E&E	G&M	E&E	G&M	E&E
Non-Priority Pollutant Volatile Organic Compounds Concentrations are in ug/kg						
Acetone	NA	1,379 BE	NA	9,103 BE	NA	4,405 B
Methyl ethyl ketone	NA	30 B	NA	23,641 BE	NA	ND
Carbon disulfide	NA	ND	NA	ND	NA	ND
Vinyl acetate	NA	ND	NA	ND	NA	ND
2-Hexanone	NA	ND	NA	63	NA	ND
Methyl-iso-butyl ketone	NA	ND	NA	1,244 B	NA	36 B
Styrene	NA	ND	NA	ND	NA	ND
Total Xylenes	NA	ND	NA	141	NA	976
Sub Total 2:	0	1,409	0	34,192	0	5,417
Total VOCs Analyzed:	62.8	1,409	418	36,929	67	5,686

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 1C Summary of Volatile Organic compounds in Soil Samples, Site O, SSDRA, Saugot, Illinois.

Sample Designation:	DC-04-62 (Boring #4)		DC-05-63 (Boring #5)		
Sample Depth: (feet below land surface)	0 - 10		8.5 - 20		
Date:	2/17/87		2/17/87		
USEPA Priority Pollutant Volatile Organic Compounds Concentrations are in ug/kg	G&M	E&E	G&M	E&E	E&E *
Acrolein	<1,000,000	NA	<1,000	NA	NA
Arcylonitrile	<1,000,000	NA	<1,000	NA	NA
Benzene	96,300	30,769	<44	ND	18 J
bis(Chloromethyl)ether	<100,000	NA	<100	NA	NA
Bromoform	<47,000	ND	<47	ND	ND
Carbon tetrachloride	<28,000	ND	<28	ND	ND
Chlorobenzene	138,000	38,462	274	74	159
Chlorodibromomethane	<31,000	ND	<31	ND	ND
Chloroethane	<100,000	ND	<100	ND	ND
2-Chloroethylvinyl ether	<100,000	ND	<100	ND	ND
Chloroform	<16,000	ND	<16	ND	ND
Dichlorobromomethane	<22,000	ND	<22	ND	ND
Dichlorodifluoromethane	<100,000	NA	<100	NA	NA
1,1-Dichloroethane	<47,000	ND	<47	ND	ND
1,2-Dichloroethane	<28,000	ND	<28	ND	ND
1,1-Dichloroethylene	<28,000	ND	<28	ND	ND
1,2-Dichloropropane	<60,000	ND	<60	ND	ND
cis-1,3-Dichloropropylene	<50,000	ND	<50	ND	ND
trans-1,3-Dichloropropylene	<100,000	ND	<100	ND	ND
Ethylbenzene	595,000	166,667 B	176	37 J	57 J
Methyl bromide	<100,000	ND	<100	ND	ND
Methyl chloride	<100,000	NA	<100	NA	NA
Methylene chloride	56,000	833 BJ	<28	ND	18 J
1,1,2,2-Tetrachloroethane	<69,000	ND	<69	ND	ND
Tetrachloroethylene	<41,000	ND	<41	ND	ND
Toluene	99,400	29,487	<60	ND	ND
1,2-trans-Dichloroethylene	<16,000	ND	<16	ND	ND
1,1,1-Trichloroethane	<38,000	1,410	<38	ND	ND
1,1,2-Trichloroethane	<50,000	ND	<50	ND	ND
Trichloroethylene	<19,000	ND	<19	ND	ND
Trichlorofluoromethane	<100,000	NA	<100	NA	NA
Vinyl chloride	<100,000	ND	<100	ND	ND
Sub Total 1:	984,700	267,628	450	111	252

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 1C Summary of Volatile Organic compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-04-62 (Boring #4)		DC-05-63 (Boring #5)		
Sample Depth: (feet below land surface)	0 - 10		8.5 - 20		
Date:	2/17/87		2/17/87		
	G&M	E&E	G&M	E&E	E&E *
Non-Priority Pollutant Volatile Organic Compounds Concentrations are in ug/kg					
Acetone	NA	7,692 B	NA	8,659 BE	11,463 BE
Methyl ethyl ketone	NA	7,179 B	NA	244 B	171 B
Carbon disulfide	NA	ND	NA	ND	ND
Vinyl acetate	NA	ND	NA	ND	ND
2-Hexanone	NA	ND	NA	ND	ND
Methyl-iso-butyl ketone	NA	7,692	NA	ND	ND
Styrene	NA	ND	NA	ND	ND
Total Xylenes	NA	615,385 E	NA	244	256
Sub Total 2:	0	637,948	0	9,147	11,890
Total VOCs Analyzed:	984,700	905,576	450	9,258	12,142

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 1C Summary of Volatile Organic compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-06-66 (Boring #6 / EE-23)	
Sample Depth: (feet below land surface)	15 - 25	
Date:	2/18/87	
USEPA Priority Pollutant Volatile Organic Compounds Concentrations are in ug/kg	G&M	E&E
Acrolein	<100	NA
Arcylonitrile	<100	NA
Benzene	<4.4	ND
bis(Chloromethyl)ether	<10	NA
Bromoform	<4.7	ND
Carbon tetrachloride	<2.8	ND
Chlorobenzene	<6.0	ND
Chlorodibromomethane	<3.1	ND
Chloroethane	<10	ND
2-Chloroethylvinyl ether	<10	ND
Chloroform	<1.6	ND
Dichlorobromomethane	<2.2	ND
Dichlorodifluoromethane	<10	NA
1,1-Dichloroethane	<4.7	ND
1,2-Dichloroethane	<2.8	ND
1,1-Dichloroethylene	<2.8	ND
1,2-Dichloropropane	<6.0	ND
cis-1,3-Dichloropropylene	<5.0	ND
trans-1,3-Dichloropropylene	<10	ND
Ethylbenzene	<7.2	ND
Methyl bromide	<10	ND
Methyl chloride	<10	NA
Methylene chloride	51.1	4 J
1,1,2,2-Tetrachloroethane	<6.9	ND
Tetrachloroethylene	<4.1	ND
Toluene	<6.0	ND
1,2-trans-Dichloroethylene	<1.6	ND
1,1,1-Trichloroethane	<3.8	ND
1,1,2-Trichloroethane	<5.0	ND
Trichloroethylene	<1.9	ND
Trichlorofluoromethane	<10	NA
Vinyl chloride	<10	ND
Sub Total 1:	51.1	4

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 1C Summary of Volatile Organic compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-06-66 (Boring #6 / EE-23)	
Sample Depth: (feet below land surface)	15 - 25	
Date:	2/18/87	
	G&M	E&E
Non-Priority Pollutant Volatile Organic Compounds Concentrations are in ug/kg		
Acetone	NA	457 B
Methyl ethyl ketone	NA	20 B
Carbon disulfide	NA	ND
Vinyl acetate	NA	ND
2-Hexanone	NA	ND
Methyl-iso-butyl ketone	NA	ND
Styrene	NA	ND
Total Xylenes	NA	ND
Sub Total 2:	0	477
Total VOCs Analyzed:	51.1	481

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 2C Summary of Acid Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-01-59 (Boring #1 / EE-21)		DC-02-60 (Boring #2 / EE-22)		DC-03-61 (Boring #3)	
Sample Depth: (feet below land surface)	15 - 25		20 - 30		10 - 20	
Date:	2/16/87		2/17/87		2/17/87	
	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Acid Compounds Concentrations are in ug/kg						
2-Chlorophenol	<140	ND	<140	ND	<130	ND
2,4-Dichlorophenol	<110	ND	<110	ND	<110	ND
2,4-Dimethylphenol	<110	ND	<110	ND	<110	ND
4,6-Dinitro-o-cresol	<1,000	ND	<1,000	ND	<950	ND
2,4-Dinitrophenol	<1,800	ND	<1,800	ND	<1,700	ND
2-Nitrophenol	<150	ND	<150	ND	<140	ND
4-Nitrophenol	<100	ND	<100	ND	503	ND
p-Chloro-m-cresol	<130	ND	<130	ND	<120	ND
Pentachlorophenol	<150	ND	971	ND	64,200	22,619
Phenol	<63	ND	<63	ND	789	ND
2,4,6-Trichlorophenol	<110	ND	431	ND	<110	ND
Sub Total 1	0	0	1,402	0	65,492	22,619
Non-Priority Pollutant Acid Extractable Organic Compounds						
2-Methylphenol	NA	ND	NA	ND	NA	ND
4-Methylphenol	NA	ND	NA	ND	NA	ND
Benzoic acid	NA	ND	NA	ND	NA	ND
2,4,5-Trichlorophenol	NA	ND	NA	ND	NA	ND
Sub Total 2	0	0	0	0	0	0
Total Acid Compounds Analyzed	0	0	1,402	0	65,492	22,619

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

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Table 2C Summary of Acid Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-04-62 (Boring #4)		DC-05-63 (Boring #5)		
Sample Depth:	0 - 10		8.5 - 20		
Date:	2/17/87		2/17/87		
	G&M	E&E	G&M	E&E	E&E *
USEPA Priority Pollutant Acid Compounds Concentrations are in ug/kg					
2-Chlorophenol	<2,900	ND	226	ND	ND
2,4-Dichlorophenol	14,800	ND	838	ND	ND
2,4-Dimethylphenol	<2,300	ND	<110	ND	ND
4,6-Dinitro-o-cresol	<21,000	ND	<980	ND	ND
2,4-Dinitrophenol	<37,000	ND	<1,700	ND	ND
2-Nitrophenol	<3,100	ND	<150	ND	ND
4-Nitrophenol	<2,100	ND	<98	ND	ND
p-Chloro-m-cresol	<2,600	ND	<120	ND	ND
Pentachlorophenol	2,190,000	474,359 J	21,800	ND	ND
Phenol	26,600	ND	<61	ND	ND
2,4,6-Trichlorophenol	<2,300	ND	<110	ND	ND
Sub Total 1	2,231,400	474359	22,864	0	0
Non-Priority Pollutant Acid Extractable Organic Compounds					
2-Methylphenol	NA	ND	NA	ND	ND
4-Methylphenol	NA	ND	NA	ND	ND
Benzoic acid	NA	ND	NA	ND	ND
2,4,5-Trichlorophenol	NA	ND	NA	ND	ND
Sub Total 2	0	0	0	0	0
Total Acid Compounds Analyzed	2,231,400	474,359	22,864	0	0

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 2C Summary of Acid Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-06-66 (Boring #6 / EE-23)	
Sample Depth:	15 - 25	
Date:	2/18/87	
	G&M	E&E
USEPA Priority Pollutant Acid Compounds Concentrations are in ug/kg		
2-Chlorophenol	<2,600	NA
2,4-Dichlorophenol	<2,100	NA
2,4-Dimethylphenol	<2,100	NA
4,6-Dinitro-o-cresol	<19,000	NA
2,4-Dinitrophenol	<33,000	NA
2-Nitrophenol	<2,800	NA
4-Nitrophenol	<1,900	NA
p-Chloro-m-cresol	<2,400	NA
Pentachlorophenol	<2,800	NA
Phenol	<1,200	NA
2,4,6-Trichlorophenol	<2,100	NA
Sub Total 1	0	0
Non-Priority Pollutant Acid Extractable Organic Compounds		
2-Methylphenol	NA	NA
4-Methylphenol	NA	NA
Benzoic acid	NA	NA
2,4,5-Trichlorophenol	NA	NA
Sub Total 2	0	0
Total Acid Compounds Analyzed	0	0

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 3C Summary of Base/Neutral Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-01-59 (Boring #1 / EE-21)		DC-02-60 (Boring #2 / EE-22)		DC-03-61 (Boring #3)	
Sample Depth: (feet below land surface)	15 - 25		20 - 30		10 - 20	
Date:	2/16/87		2/17/87		2/17/87	
	G&M	E&E	G&M	E&E	G&M	E&E
USEPA Priority Pollutant Base/Neutral Compounds Concentrations are in ug/kg						
Acenaphthene	<80	ND	<80	ND	<76	ND
Acenaphthylene	<150	ND	<150	ND	<140	ND
Anthracene	<80	ND	<80	ND	<76	5,357
Benzidine	<1,800	NA	<1,800	NA	<1,800	NA
Benzo(a)anthracene	<330	ND	<330	ND	<310	ND
Benzo(a)pyrene	<100	ND	<100	ND	<99	ND
Benzo(b)fluoranthene	<420	ND	<420	ND	<400	ND
Benzo(ghi)perylene	<170	ND	<170	ND	<160	ND
Benzo(k)fluoranthene	<150	ND	<150	ND	<140	ND
bis(2-Chloroethoxy)methane	<220	ND	<220	ND	<210	ND
bis(2-Chloroethyl)ether	<240	ND	<240	ND	<230	ND
bis(2-Chloroisopropyl)ether	<240	ND	<240	ND	<230	ND
bis(2-Ethylhexyl)phthalate	<420	1,379 BJ	<420	ND	<400	1,905 BJ
4-Bromophenyl ether	<80	ND	<80	ND	<76	ND
Butyl benzyl phthalate	<420	ND	<420	ND	<400	ND
2-Chloronaphthalene	<80	ND	<80	ND	<76	ND
4-Chlorophenyl phenyl ether	<180	ND	<180	ND	<170	ND
Chrysene	<100	ND	<100	ND	105	ND
Dibenzo(a,h)anthracene	<420	ND	<420	ND	<400	ND
1,2-Dichlorobenzene	<80	ND	1,040	ND	614	ND
1,3-Dichlorobenzene	<80	ND	<80	ND	<76	ND
1,4-Dichlorobenzene	<180	ND	1,620	ND	320	ND
3,3'-Dichlorobenzidine	<690	ND	<690	ND	<660	ND
Diethyl phthalate	<420	ND	<420	ND	<400	ND
Dimethyl phthalate	<420	ND	<420	ND	<400	ND
Di-n-butyl phthalate	<420	5,287	<420	ND	<400	ND
2,4-Dinitrotoluene	<240	ND	<240	ND	<230	ND
2,6-Dinitrotoluene	<80	ND	<80	ND	<76	ND
Di-n-octyl phthalate	<420	ND	<420	ND	<400	ND
1,2-Diphenylhydrazine	<420	NA	<420	NA	<400	NA
Fluoranthene	<92	ND	<92	ND	<88	ND
Fluorene	<80	ND	<80	ND	<76	ND
Hexachlorobenzene	<80	ND	<80	ND	<76	ND
Hexachlorobutadiene	<38	ND	<38	ND	<36	ND
Hexachlorocyclopentadiene	<420	ND	<420	ND	<400	ND
Hexachloroethane	<67	ND	<67	ND	<64	ND
Indeno(1,2,3-c,d)pyrene	<200	ND	<200	ND	<190	ND
Isophorone	<92	ND	<92	ND	<88	ND
Naphthalene	<67	ND	<67	ND	<64	ND
Nitrobenzene	<80	ND	<80	ND	147	ND
N-Nitrosodimethylamine	<420	NA	<420	NA	<400	NA
N-Nitrosodi-n-propylamine	<420	ND	<420	ND	<400	ND
N-Nitrosodiphenylamine	<80	ND	<80	ND	<76	ND
Phenanthrene	<230	ND	<230	ND	<210	ND
Pyrene	<80	ND	<80	ND	<76	ND
1,2,4-Trichlorobenzene	<80	ND	<80	ND	<76	ND
Sub Total 1	0	6,666	2,660	0	1,186	7,262

Table 3C Summary of Base/Neutral Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-01-59 (Boring #1 / EE-21)		DC-02-60 (Boring #2 / EE-22)		DC-03-61 (Boring #3)	
Sample Depth: (feet below land surface)	15 - 25		20 - 30		10 - 20	
Date:	2/16/87		2/17/87		2/17/87	
	G&M	E&E	G&M	E&E	G&M	E&E
Non-Priority Pollutant Base/Neutral Compounds Concentrations are in ug/kg						
Benzyl alcohol	NA	ND	NA	ND	NA	ND
Aniline	NA	NA	NA	NA	NA	NA
4-Chloroaniline	NA	ND	NA	ND	NA	ND
2-Methylnaphthalene	NA	ND	NA	ND	NA	ND
2-Nitroaniline	NA	NA	NA	NA	NA	NA
3-Nitroaniline	NA	ND	NA	ND	NA	ND
Dibenzofuran	NA	ND	NA	ND	NA	ND
4-Nitroaniline	NA	ND	NA	ND	NA	ND
Sub Total 2	0	0	0	0	0	0
Total Base/Neutral Compounds	0	6,666	2,660	0	1,186	7,262

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 3C Summary of Base/Neutral Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-04-62 (Boring #4)		DC-05-63 (Boring #5)		
Sample Depth: (feet below land surface)	0 - 10		8.5 - 20		
Date:	2/17/87		2/17/87		
USEPA Priority Pollutant Base/Neutral Compounds Concentrations are in ug/kg	G&M	E&E	G&M	E&E	E&E
Acenaphthene	<4,100	ND	<77	ND	ND
Acenaphthylene	<7,600	ND	<140	ND	ND
Anthracene	17,500	ND	100	ND	ND
Benzidine	<96,000	NA	<1,800	NA	NA
Benzo(a)anthracene	105,000	121,795	560	ND	ND
Benzo(a)pyrene	88,800	66,667 J	574	ND	ND
Benzo(b)fluoranthene	74,000	29,487 J	510	ND	ND
Benzo(ghi)perylene	66,900	52,564 J	307	ND	ND
Benzo(k)fluoranthene	<7,600	ND	<140	ND	ND
bis(2-Chloroethoxy)methane	<12,000	ND	<220	ND	ND
bis(2-Chloroethyl)ether	<12,000	ND	<230	ND	ND
bis(2-Chloroisopropyl)ether	<12,000	ND	<230	ND	ND
bis(2-Ethylhexyl)phthalate	<22,000	ND	<410	ND	2,439 JB
4-Bromophenyl ether	<4,100	ND	<77	ND	ND
Butyl benzyl phthalate	<22,000	ND	<410	ND	ND
2-Chloronaphthalene	<4,100	ND	<77	ND	ND
4-Chlorophenyl phenyl ether	<9,100	ND	<170	ND	ND
Chrysene	296,000	282,051	1,180	ND	1,951 J
Dibenzo(a,h)anthracene	31,900	ND	<410	ND	ND
1,2-Dichlorobenzene	124,000	24,359 J	1,400	ND	ND
1,3-Dichlorobenzene	5,180	ND	84.2	ND	ND
1,4-Dichlorobenzene	83,200	ND	864	ND	ND
3,3'-Dichlorobenzidine	<37,000	ND	<670	ND	ND
Diethyl phthalate	<22,000	ND	<410	ND	ND
Dimethyl phthalate	<22,000	ND	<410	ND	ND
Di-n-butyl phthalate	<22,000	ND	<410	3,780 J	ND
2,4-Dinitrotoluene	<12,000	ND	<230	ND	ND
2,6-Dinitrotoluene	<4,100	ND	<77	ND	ND
Di-n-octyl phthalate	<22,000	ND	<410	ND	ND
1,2-Diphenylhydrazine	<22,000	NA	<410	NA	NA
Fluoranthene	32,600	43,590 J	<90	ND	ND
Fluorene	<4,100	ND	77.9	ND	ND
Hexachlorobenzene	<4,100	ND	<77	ND	ND
Hexachlorobutadiene	<2,000	ND	<37	ND	ND
Hexachlorocyclopentadiene	<22,000	ND	<410	ND	ND
Hexachloroethane	<3,500	ND	<65	ND	ND
Indeno(1,2,3-c,d)pyrene	10,900	ND	<190	ND	ND
Isophorone	<4,800	ND	<90	ND	ND
Naphthalene	61,300	34,615 J	189	ND	ND
Nitrobenzene	<4,100	ND	<77	ND	ND
N-Nitrosodimethylamine	<22,000	NA	<410	NA	NA
N-Nitrosodi-n-propylamine	<22,000	ND	<410	ND	ND
N-Nitrosodiphenylamine	<4,100	50,000 J	<77	ND	ND
Phenanthrene	223,000	217,949	800	ND	ND
Pyrene	254,000	282,051	1,150	ND	ND
1,2,4-Trichlorobenzene	43,600	26,923 J	427	ND	ND
Sub Total 1	1,517,880	1,232,051	8,223	3,780	4,390

Table 3C Summary of Base/Neutral Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-04-62 (Boring #4)		DC-05-63 (Boring #5)		
Sample Depth: (feet below land surface)	0 - 10		8.5 - 20		
Date:	2/17/87		2/17/87		
Non-Priority Pollutant Base/Neutral Compounds Concentrations are in ug/kg	G&M	E&E	G&M	E&E	E&E
Benzyl alcohol	NA	ND	NA	ND	ND
Aniline	NA	NA	NA	NA	NA
4-Chloroaniline	NA	ND	NA	ND	ND
2-Methylnaphthalene	NA	160,256	NA	ND	ND
2-Nitroaniline	NA	NA	NA	NA	NA
3-Nitroaniline	NA	ND	NA	ND	ND
Dibenzofuran	NA	ND	NA	ND	ND
4-Nitroaniline	NA	ND	NA	ND	ND
Sub Total 2	0	160256	0	0	0
Total Base/Neutral Compounds	1,517,880	1,232,051	8,223	3,780	4,390

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.

Table 3C Summary of Base/Neutral Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-06-66 (Boring #6 / EE-23)	
Sample Depth: (feet below land surface)	15 - 25	
Date:	2/18/87	
USEPA Priority Pollutant Base/Neutral Compounds Concentrations are in ug/kg	G&M	E&E
Acenaphthene	<75	NA
Acenaphthylene	<140	NA
Anthracene	<75	NA
Benzidine	<1,700	NA
Benzo(a)anthracene	<310	NA
Benzo(a)pyrene	<98	NA
Benzo(b)fluoranthene	<390	NA
Benzo(ghi)perylene	<160	NA
Benzo(k)fluoranthene	<140	NA
bis(2-Chloroethoxy)methane	<210	NA
bis(2-Chloroethyl)ether	<220	NA
bis(2-Chloroisopropyl)ether	<220	NA
bis(2-Ethylhexyl)phthalate	<390	NA
4-Bromophenyl ether	<75	NA
Butyl benzyl phthalate	<390	NA
2-Chloronaphthalene	<75	NA
4-Chlorophenyl phenyl ether	<170	NA
Chrysene	<98	NA
Dibenzo(a,h)anthracene	<390	NA
1,2-Dichlorobenzene	<75	NA
1,3-Dichlorobenzene	<75	NA
1,4-Dichlorobenzene	<170	NA
3,3'-Dichlorobenzidine	<650	NA
Diethyl phthalate	<390	NA
Dimethyl phthalate	<390	NA
Di-n-butyl phthalate	<390	NA
2,4-Dinitrotoluene	<220	NA
2,6-Dinitrotoluene	<75	NA
Di-n-octyl phthalate	<390	NA
1,2-Diphenylhydrazine	<390	NA
Fluoranthene	<86	NA
Fluorene	<75	NA
Hexachlorobenzene	<75	NA
Hexachlorobutadiene	<35	NA
Hexachlorocyclopentadiene	<390	NA
Hexachloroethane	<63	NA
Indeno(1,2,3-c,d)pyrene	<180	NA
Isophorone	<86	NA
Naphthalene	<63	NA
Nitrobenzene	<75	NA
N-Nitrosodimethylamine	<390	NA
N-Nitrosodi-n-propylamine	<390	NA
N-Nitrosodiphenylamine	<75	NA
Phenanthrene	<210	NA
Pyrene	<75	NA
1,2,4-Trichlorobenzene	<75	NA
Sub Total 1	0	0

Table 3C Summary of Base/Neutral Compounds in Soil Samples, Site O, SSDRA, Sauget, Illinois.

Sample Designation:	DC-06-66 (Boring #6 / EE-23)	
Sample Depth: (feet below land surface)	15 - 25	
Date:	2/18/87	
	G&M	E&E
Non-Priority Pollutant Base/Neutral Compounds Concentrations are in ug/kg		
Benzyl alcohol	NA	ND
Aniline	NA	NA
4-Chloroaniline	NA	ND
2-Methylnaphthalene	NA	ND
2-Nitroaniline	NA	NA
3-Nitroaniline	NA	ND
Dibenzofuran	NA	ND
4-Nitroaniline	NA	ND
Sub Total 2	0	0
Total Base/Neutral Compounds	0	0

ND Not detected.
NA Not analyzed
B Compound detected in blank samples.
J Estimated value. Result is less than the specified detection limit, but greater than zero.
E Estimated value. Concentration detected exceeds the calibrated range.
C Result confirmed by GC/MS.
* Replicate sample.